

REMARKS

Claim 7 has been further revised better to point out that which applicants regard as their invention. More particularly, the claim now specifies that the heating blocks in the heating board are arranged in a vertical direction "in one line." The change is clearly supported by Figs. 25 and 26 wherein blocks 9A, 9B, and 9C are arranged in a vertical direction in a single line.

The specification has been amended to include the patent number of the parent case.

The rejection of claim 7 under 35 USC 103 as unpatentable over Ohno '536 in view Nied et al. '490, if applied to the claim as amended, is respectfully traversed.

Ohno '536 is said to show all the features of claim 7 but for a vertical arrangement of the plurality of independently controlled heat blocks. Nied et al. '490 is said to show an apparatus used for the differential heating and thermoforming of a polymer sheet wherein the heater element is divided into a plurality of independently controlled segments (24) differentially to heat different segments of the polymer sheet. The Examiner concludes that it would have been obvious to use a similar arrangement in the Ohno '536 device "because this would have allowed for the

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differential heating of different areas of the film as suggested by Nied"; see the paragraph bridging pages 4 and 5 of the Office Action. Applicants respectfully submit that the references in combination do not teach or suggest the invention as claimed.

Nied et al. '490 shows a plurality of heating blocks (24) called "discrete conductive electrode segments" arranged in a two-dimensional matrix form; see Figs. 1 and 3. The apparatus is intended for making thermoformed three-dimensional articles of a desired wall thickness from a sheet of polar polymer; see the Abstract. Applicants' apparatus on the other hand calls for a plurality of heating blocks arranged in a vertical direction in one line. Applicants' apparatus is for forming a pattern onto an article during an injection molding thereof. As noted in the specification at page 20, line 29 to page 21, line 8, it is conventionally observed that the higher the position of the pattern-bearing film to be heated, the higher the temperature thereof. Such a phenomenon invites longitudinal non-uniform temperature distribution in a more serious degree when the heating board is formed of one body and is longitudinally extended. Because the claim 7 apparatus has the plurality of heating blocks arranged in a vertical direction in one line, it is possible to

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attain longitudinal uniform temperature distribution even when the heating board is extended longitudinally. There is more local control of the heating of the heating board. The art neither teaches nor suggests such advantages in the context of the present invention. The rejection should be withdrawn.

The rejection of claim 8 under 35 USC 103 as unpatentable over Ohno '536 in view of Nied et al. '490, further in view of Chapman '669 is also respectfully traversed. Chapman '669 is cited to show the use of individual temperature sensors. The patent, however, does not overcome the deficiencies of the primary and other secondary reference discussed above and the rejection should be withdrawn as well.

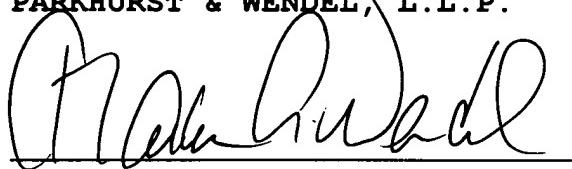
In view of the foregoing revisions and remarks, it is respectfully submitted that the application is in condition for allowance and a USPTO paper to those ends is earnestly solicited.

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The Examiner is requested to telephone the undersigned if additional changes are required in the case prior to allowance.

Respectfully submitted,

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MARKUP

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7. (Amended) An apparatus for forming a pattern onto an article during an injection molding thereof, comprising:

feed means that feeds a pattern-bearing film to a molding position where a male mold and a female mold are opposed;

a heating board that heats said pattern-bearing film so as to soften it, said heating board having a heating surface and being movable into and away from a space between said male mold and said female mold;

transfer means that transfers said pattern-bearing film to an internal surface of said female mold so as to contact said pattern-bearing film with said internal surface;

closing means that causes said male mold and said female mold with said pattern-bearing film therein to approach each other to form a closed molding cavity; and

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a resin injecting device that injects a molten resin into said cavity to form a molded article to adhere said pattern-bearing film to the surface of said article;

wherein (1) said heating board is divided into a plurality of heating blocks, each of said blocks independently controlling heat generated by the block, and (2) said heating blocks are arranged in a vertical direction so that one heating block is disposed adjacently above another heating block.

in one line